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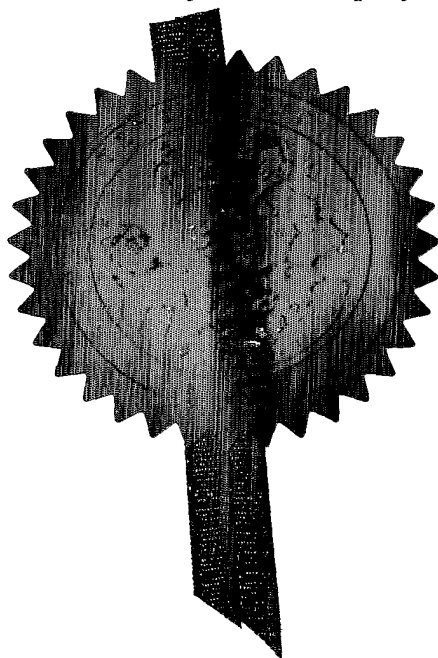
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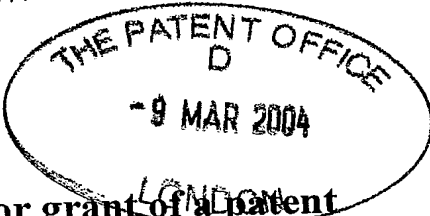


Stephen Hordley

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P710876GB/AJC/51707-

2. Patent application number

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09 MAR 2004

3. Full name, address and postcode of the or of each applicant (underline all surnames)

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Patents ADP number (if you know it)

If the applicant is a corporate body, give the country/state of its incorporation

England and Wales

8588824001

4. Title of the invention

Volumetric Dispenser

5. Name of your agent (if you have one)

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

WITHERS & ROGERS
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Description 8

Claim(s) -

Abstract -

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Signature Adrian J Chettle Date 08/03/2004

12. Name and daytime telephone number of person to contact in the United Kingdom Adrian J Chettle 01926 336111

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P710876GB

Volumetric Dispenser

5 The present invention relates to a device for dispensing a dose of material, and particularly to a container adapted to dispense into another material, such as a diluent or reactant.

10 It is known to provide sealed containers of a precise dose of material. Such containers may be used to dispense the dose directly or to dispense the dose into another material to form a mixture. In the first case the dose may comprise a human medicament or a measure of alcoholic beverage. In the second case, the dose may comprise one component of a reactive compound, or a concentrate intended for dilution at the time of use.

15 A particular problem arises with the packaging of alcoholic beverages, in particular those which comprise a spirit intended for dilution in another liquid, such as gin and tonic. Generally speaking each component is provided separately, either as an individual dose or by way of bulk container. Pre-mixing is unacceptable.

20 A further difficulty is that a container, such as a glass, must be provided and into which the spirit and diluent is poured. This arrangement requires additional resources, and concentration by the user so as to avoid spillage.

25 Dispensing containers have been proposed for attachment to the mouth of a bottle, so that manipulation of the container will release the contents thereof into the bottle. Such prior proposals have not been commercially successful.

Similar problems arise in connection with reactive materials, such as epoxy resins and the like.

What is required is a dispensing container which is reliable in operation, has a minimum number of components, is inexpensive, and is readily adaptable to existing technology.

- 5 According to the invention, there is provided a shot dispenser comprising:
- a housing having an axis, a base transverse to said axis, and a wall upstanding from said base and defining an enclosure;
 - a chamber within said enclosure and relatively movable along said axis between a closed condition in which material therein is contained, and an open condition in which
 - 10 material therein can drain past said base;
 - and a cap for said chamber.

Preferably the chamber is non-protruding in the closed condition, and protruding in the open condition.

15

- Such a shot dispenser is inherently adapted against accidental draining thereof whilst standing on a substructure, because the chamber cannot be moved to the protruding condition. However when placed in or on the mouth of a bottle, the base can be unsupported, and deliberate relative movement of the chamber will allow the contents
- 20 thereof to drain. Furthermore a consumer may hold said wall and partially eject the chamber so as to deliberately release the contents over the desired region.

- In a preferred embodiment said wall comprises a continuous peripheral surround for the chamber. Preferably said base is annular, and defines on said axis an outlet member.
- 25 The annular base preferably includes one or more through passages adapted to receive one or more legs of said chamber such that in the non-protruding condition the terminal ends of the legs are flush with the outer surface of said base. In a preferred embodiment four equispaced legs are provided.

- 30 The outlet member may comprise a valve comprising a brim attached to said base, a crown, and a pierced side wall between the brim and crown, wherein the crown defines a disc adapted for leak tight fitting in an aperture of said chamber, relative movement of

said chamber causing said aperture to approach the brim, and to permit material in the chamber to drain via said pierced side wall. In the preferred embodiment the valve and aperture are concentric about said axis.

- 5 Preferably relative movement of said chamber is restricted, and in the preferred embodiment the bottom of said chamber abuts said brim in the protruding condition.

In a preferred embodiment said cap includes a rim in abutment with said wall to prevent relative movement of said chamber along said axis, release means being provided to
10 allow such relative movement on demand. Preferably the release means comprises a removable construction between said rim and wall, such as a tear band. In such an arrangement removal of the tear band allows the cap to be moved axially towards the base of the housing, and thereby to shift the chamber to the protruding condition.

- 15 Preferably said cap is secured to the chamber by press fit. In a preferred embodiment the cap includes a channel in the underside thereof adapted to engage the upper edge of a side wall of said chamber. Said tear ring may include means for removing a portion only whereby a circumferentially extending recess is formed to permit said cap to be prised off. Such a recess for example extends around 90°-180° of the circumference
20 only; the remaining portion prevents relative axial movement of the chamber. This arrangement permits the contents of the chamber to be dispensed from the top.

- In a preferred embodiment the tear band comprises clockwise and anti-clockwise portions having adjacent tear tabs to be gripped in the hand. The tabs may be colour
25 coded, or otherwise differentiated, for example by shape. Removal of one portion allows the cap to be removed whereas removal of both portions allows the chamber to be pushed to the protruding condition.

- In the preferred embodiment, the cap, tear band and housing together provide a
30 substantially closed drum having only apertures in the base which are themselves closed by the terminal ends of respective chamber legs. Thus the chamber cannot be accidentally opened, and the contents are secure.

Preferably the outer surface of the housing is adapted for leak tight fitting to the mouth of a container. For example the housing may have a smooth circular exterior adapted for tight fitting in the mouth of a bottle, and an external flange to ensure insertion to the
5 desired depth. Alternatively external screw threading may be provided to mate with the usual threads for a plain cap, or a collar may be provided to snap-fit over a crown cork rim.

It will be understood that the shot dispenser can thus be provided as a replacement for a
10 regular cap at the time of use, or may be attached as the sole cap at the time when the container is filled.

A shot dispenser according to the invention is primarily useful for mixing liquids at the time of use. However it will be understood that any flowable material can be contained within the chamber.

15

Other features of the invention will be apparent from the following description of a preferred embodiment of the invention illustrated by reference to the accompanying drawings in which:-

20 Fig. 1 is a perspective view of a bottle on the mouth of which is mounted a container according to the invention;

Fig. 2 corresponds to Fig. 1 but shows the container within the mouth of a bottle;

25 Fig. 3 shows an assembled container according to the invention in underside plan, elevation, perspective, and section;

Fig. 4 corresponds to Fig. 3, and shows the housing;

30 Fig. 5 corresponds to Fig. 3, and shows the chamber;

Fig. 6 corresponds to Fig. 3, and shows the cap;

Fig. 7 illustrates stages of dispensing the container contents via the base of the housing; and

5 Fig. 8 illustrates stages of dispensing the contents of the container via the cap.

Fig. 1 illustrates a typical glass bottle 10 of non-alcoholic beverage, for example a fruit flavoured drink from which a conventional cap has been removed, and to which a shot dispenser 20 according to the invention has been added. As will become apparent, the
10 shot dispenser allows a measure of e.g. vodka to be dispensed into the bottle immediately prior to consumption.

It will be appreciated that the bottle may also be supplied from a drinks manufacturer with the shot dispenser attached in place of a conventional cap. However, by supplying
15 bottles and shots separately, stock holdings may be reduced. Furthermore the bottles and shots may be supplied from different sources, which may be particularly important in the case of spirit based shots to which special taxation and storage regulations apply.

Fig. 2 illustrates the same shot dispenser 20 as Fig. 1; but installed in the mouth of a
20 bottle 11 so as to give a streamlined appearance, and to reduce package volume.

Figs. 3-6 illustrate the preferred embodiment which comprises three plastic mouldings, namely the housing (Fig. 4), the chamber (Fig. 5) and the cap (Fig. 6).

25 The housing 30 comprises a cylindrical pot 31 having a double tear band 32,33 moulded around the rim of the mouth. Each tear band is connected to rim by a thin web, and can be removed by grasping and pulling a tab 34. Tear bands of this kind are conventional but usually a single tear band extends 360° around the container. As illustrated each tear band in this embodiment extends around 180° of the circumference
30 of the mouth.

The circumferential wall 35 of the housing extends upwardly inside the tear band and is approximately level with the top thereof.

5 The base of the housing comprises an annular foot 36 having four equispaced arcuate through passages 37 therein. Within the foot 36, the base defines successively a concentric circular upstanding wall 38, a radial circular ledge or brim 39, another concentric circular upstanding wall 40 and a circular flat crown 41. These portions 38-41 together define part of a drain valve for the shot dispenser.

10 The inner circular wall 40 has apertures 42 therethrough to connect the interior of the housing with the circular space within the foot 36. Longitudinal ribs 43 are equispaced within the pot 31 to hold the chamber 50 concentric.

15 The chamber 50 (Fig. 5) comprises a generally cylindrical well having four equispaced legs 51 extending below the well bottom 52. These legs are somewhat in the shape of a half ellipse as illustrated.

20 Around the mouth of the chamber are concentric rings 53,54. The thicker lower ring 53 constitutes a bore seal and fits against the interior of the housing 30 in a leak tight manner. The thin upper ring 54 is flexible and rests on the mouth of the wall 35 in the initial condition. These features can be clearly seen in the axial section of Fig .3.

25 The well bottom 52 defines a circular concentric opening 55 into which the inner concentric wall 40 engages in a leak tight manner, as illustrated in Fig. 3. The legs 51 locate in the through holes 37 so as to be flush with the annular foot 36, and in this condition, the apertures 42 lie below the well bottom.

30 The cap 60 (Fig. 6) comprises a circular disc 61 from which depends a thick edge rim 62 and a concentric circular web 63 of about half height. Fig. 3 shows that in use, the thick rim 62 abuts the tear bands, and the space 64 between the rim and web engages the rim of the mouth of the chamber in a leak tight manner. Internal barbs may assist in

retaining the cap 60 on the chamber 50, and other conventional means may also be suitable, such as adhesive or welding.

5 In use the chamber 50 is assembled within the housing 30 on a flat surface so that the legs 51 are prevented from passing through the apertures 37. This ensures that the upper portion of the wall 40 engages in the opening 55 in a precise and leak tight manner. The chamber is then filled with a precise dose of material to be dispensed, and the cap 60 applied. The cap closes the mouth of the chamber in a leak tight manner, and the contents are thus sealed within the shot dispenser.

10

Fig. 7 illustrates one mode of use. In the left drawing, the chamber 50 is sealed and locked. In the centre drawing the double tear band has been removed. In the right drawing the chamber contents are dispensed via the opening in the base, and the apertures 42, as the cap 60 is pushed down. The flexible lip 54 passes over the wall 35 at the relatively low, but positive force.

15

It will be appreciated that the legs 51 can move freely through the through holes 37 once the shot dispenser is placed in the mouth of the bottle. The bottle however remains sealed until the shot dispenser is removed, thus allowing the contents to be mixed by e.g. shaking.

20

Alternatively the shot may be dispensed by gripping the periphery of the housing in one hand, whilst pressing down on the cap with the other hand.

25 Fig. 8 shows an alternative mode of use in which only one tear band is removed, leaving the other intact. In this case a recess 70 is provided whereby the cap 60 can be prised off, as illustrated in the right drawing. As will be appreciated, this allows the shot to be poured directly rather than via the through holes 42.

30 Any suitable means may be provided for allowing the shot dispenser to be attached to another container. The housing may for example be a friction fit and have a flange to

prevent over insertion thereof. Alternatively external screw threading may be provided to mate with a typical screw threaded container mouth.

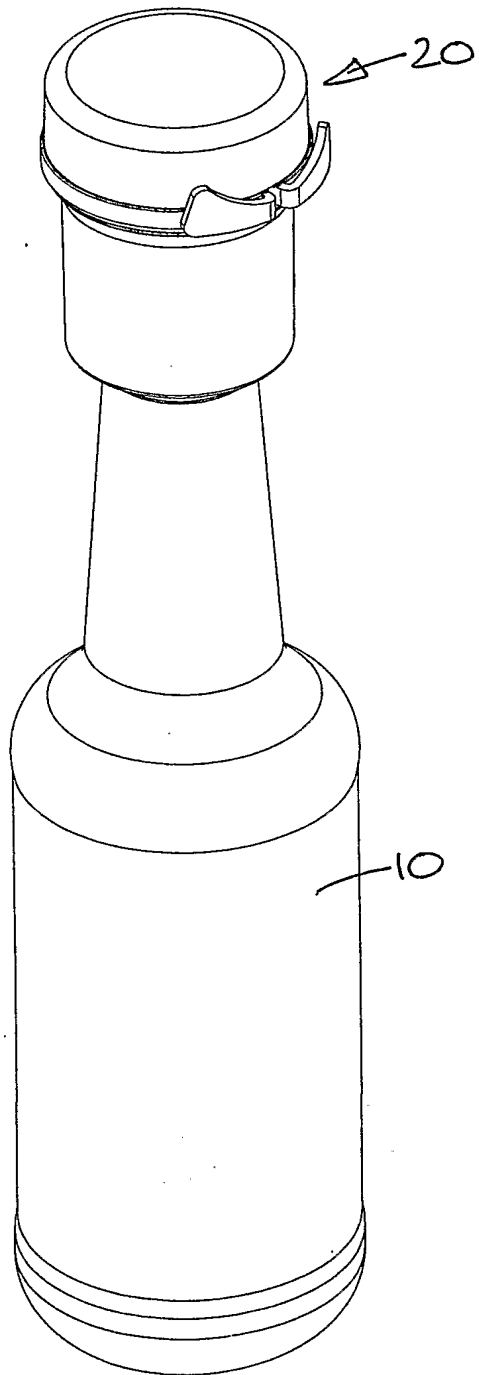


Fig 1

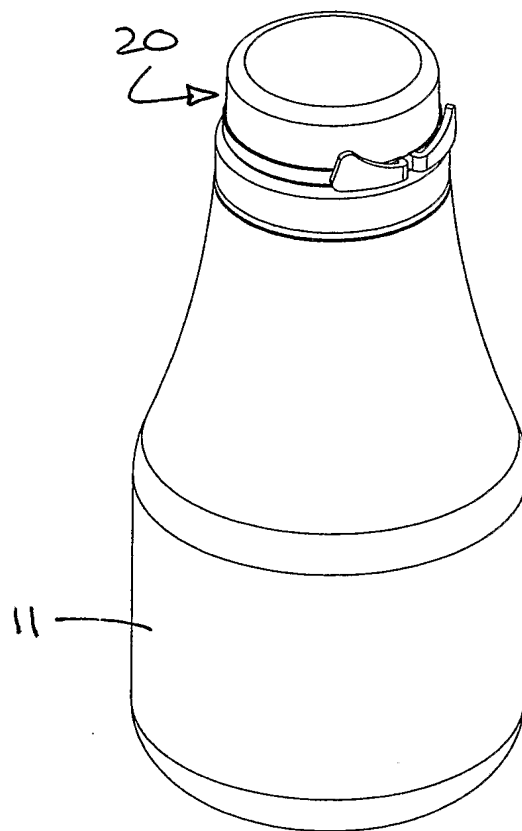
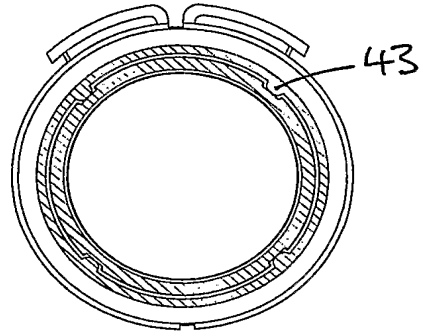
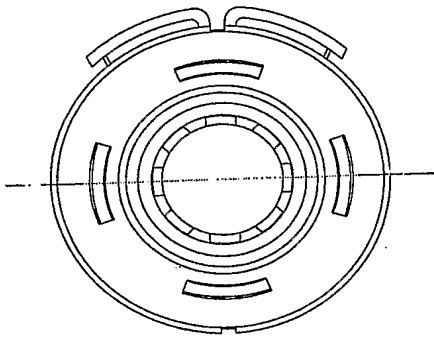


Fig 2





B-B

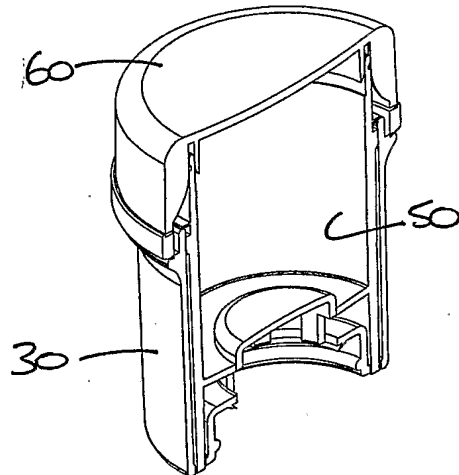
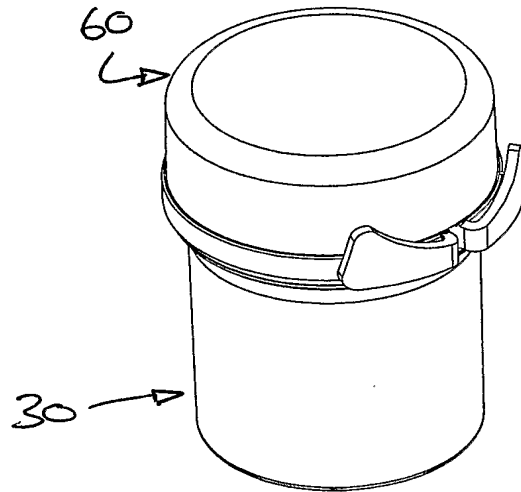
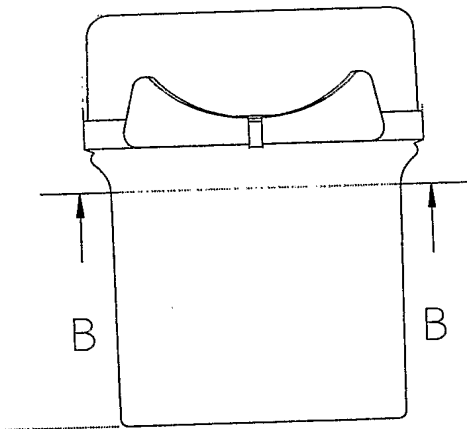


Fig 3



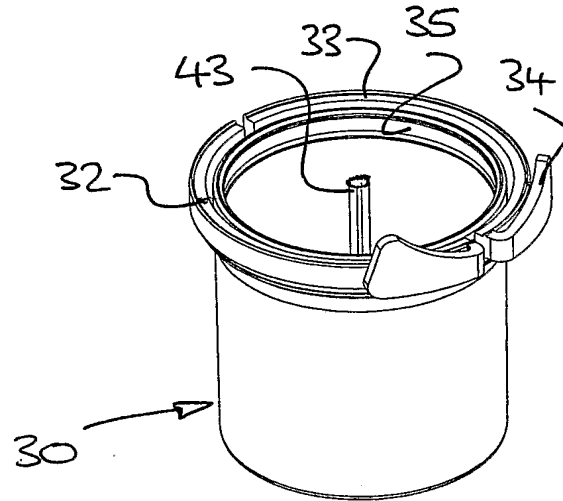
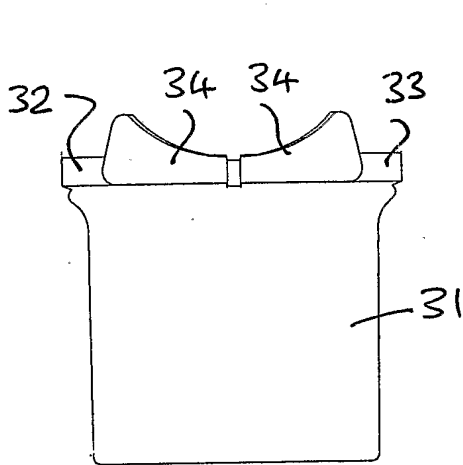
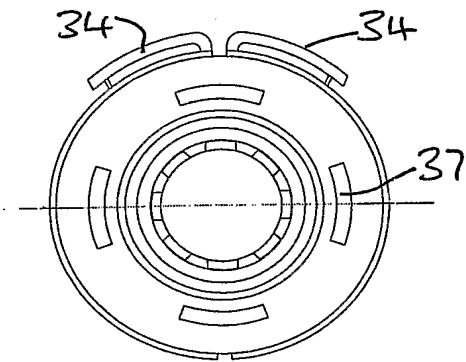
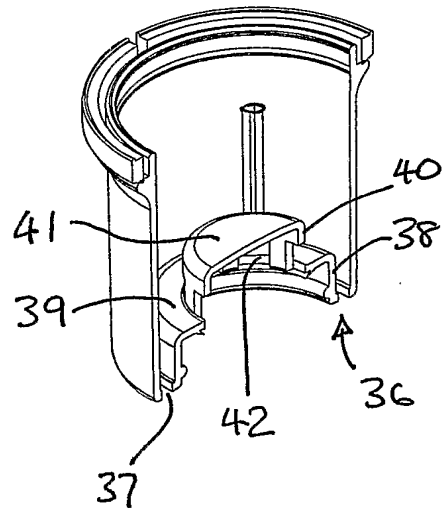


Fig 4





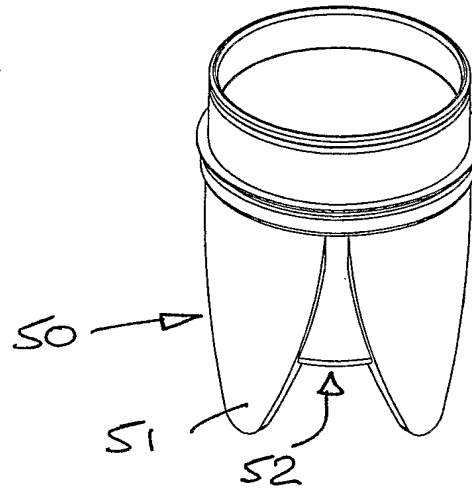
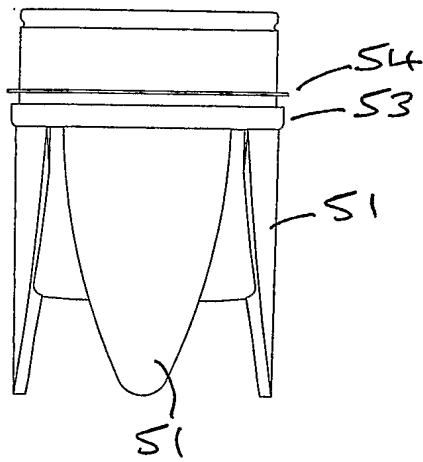
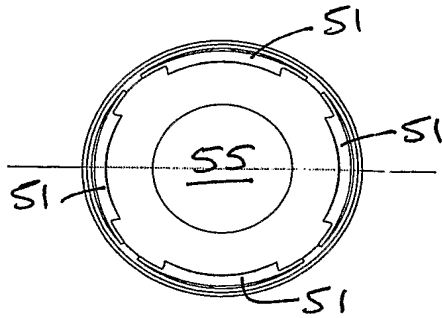
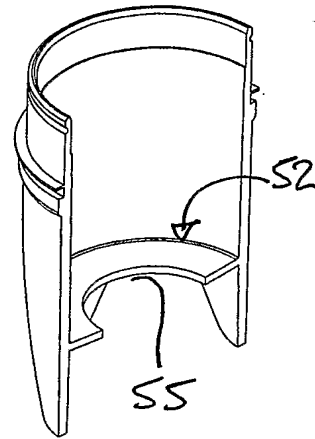


Fig 5





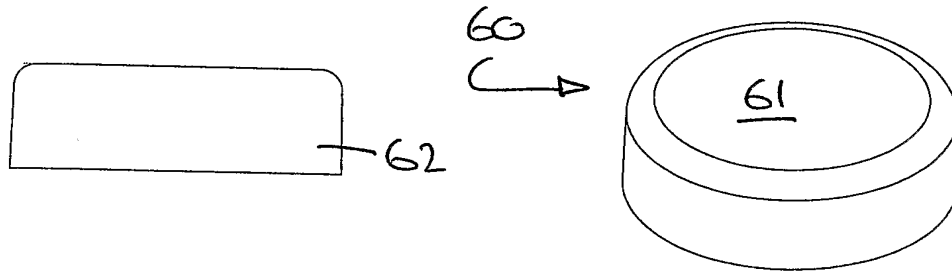
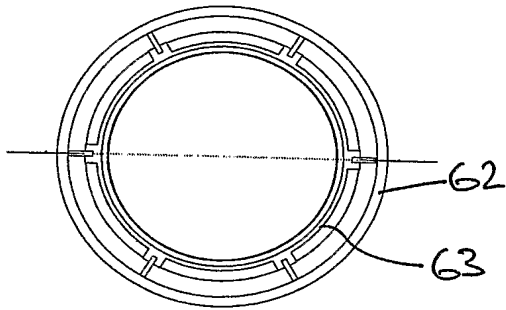
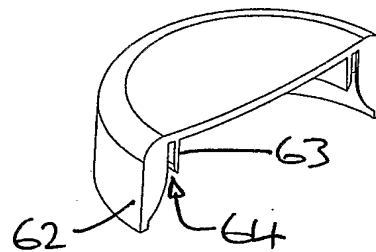


Fig 6





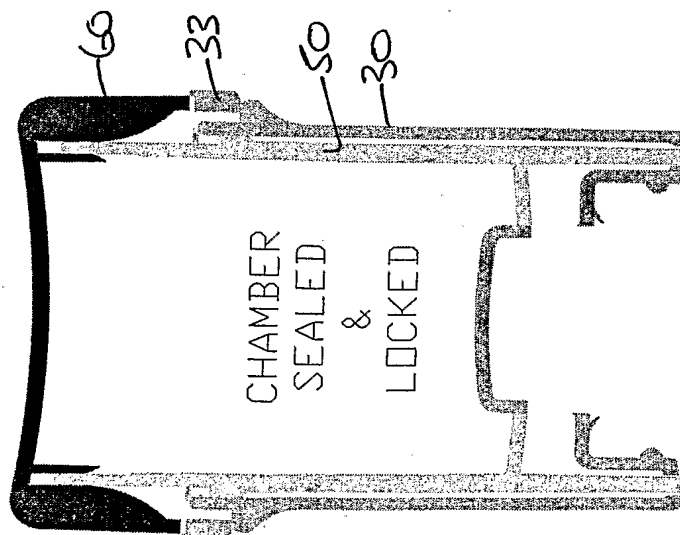
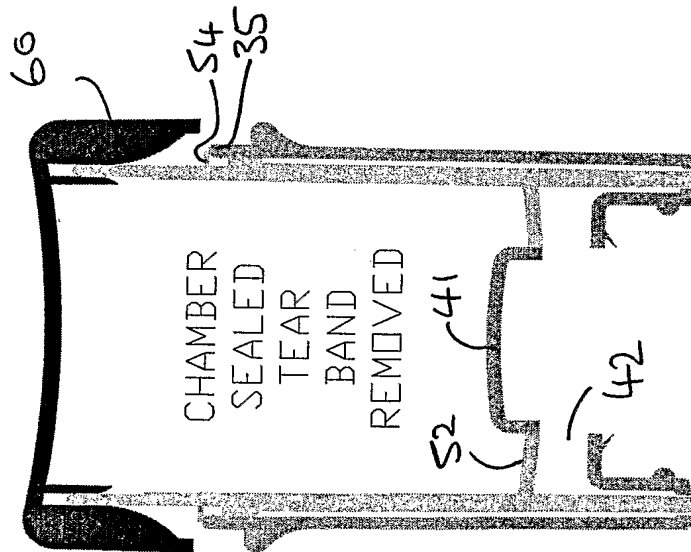
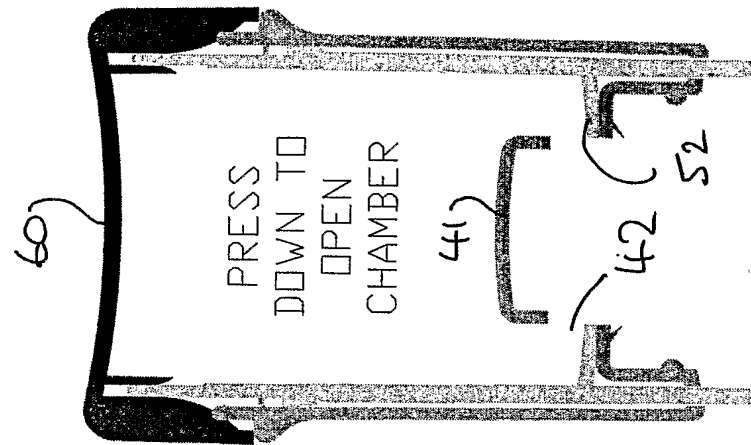


Fig 7



7/7

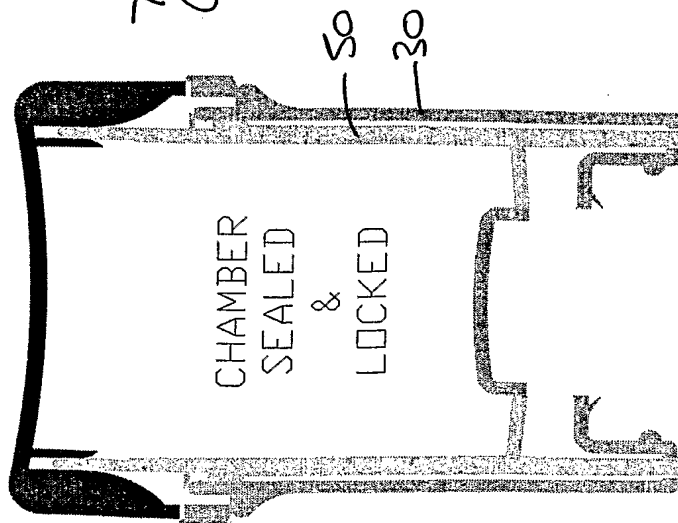
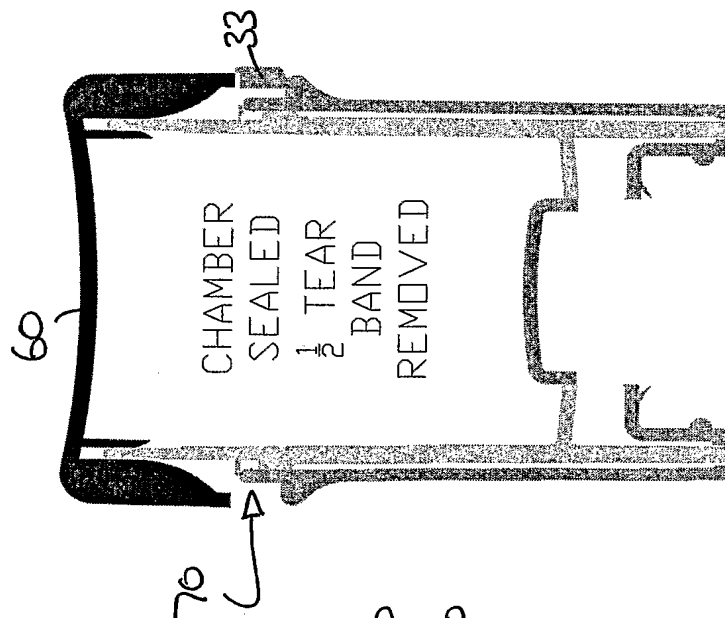
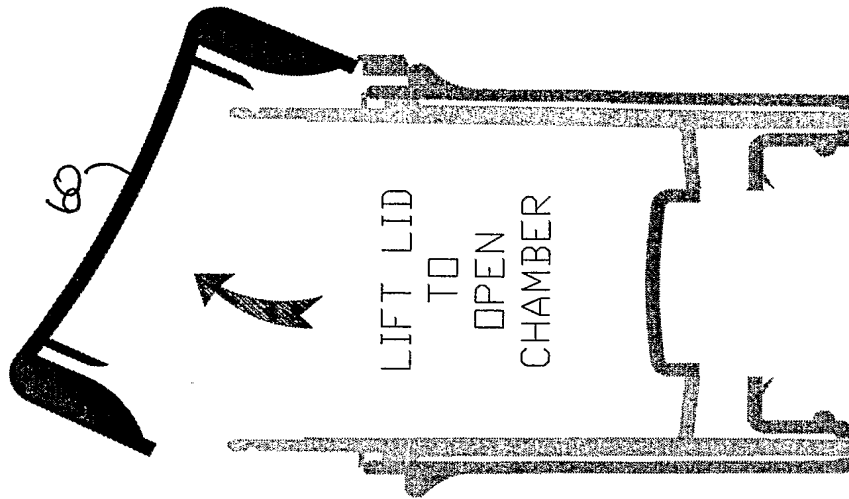


Fig 8

